

Appendix C Raingage Location

Raingage Exposure¹

The exposure of a raingage is of primary importance in the accuracy of precipitation measurements. An ideal exposure would eliminate all turbulence and eddy currents, near the gage, that tend to carry away the precipitation. The loss of precipitation in this manner tends to increase with wind speed.

Protected Sites. When objects, which individually or in small groups would constitute obstructions, are numerous and are so extensive that the prevailing wind speed and, as a consequence, the turbulence and eddy currents are reduced in the vicinity of the gage, a more accurate catch is likely. The best exposures are often found in orchards, in a grove of trees, bushes or shrubbery, or where fences and other objects acting together serve as a wind break. As a general rule, in such areas, where the height of the objects and their distance from the gage is generally uniform, their height above the gage should not exceed about twice their distance from the gage.

Open Sites. In open areas, individual or small groups of isolated objects near a gage may set up serious eddy currents. As a general rule, the height of such objects above the gage should not exceed half their distance from the gage. Since it is not always possible to select sites which provide adequate protection from adverse wind effects, an open site away from isolated objects may be the only location available.

Consistent Exposure. Good exposures are not always permanent. The growth of vegetation, trees, and shrubbery, and man-made alteration to the surroundings may change an excellent exposure to an unsatisfactory exposure in a relatively short period of time.

Gage Level. For correct measurement of precipitation, the open end of the gage must be in the horizontal plane. This can be checked by laying a carpenter's level across the open top of the gage in two directions, with one crossing the other at right angles.

Wind Shields. Wind shields attached to the gage structure help to minimize loss in precipitation catch due to wind effects.

¹ National Weather Service. (1972). *National Weather Service Observing Handbook No.2, Substation Observations*, Silver Spring, MD.